

REPORT BY THE
AUDITOR GENERAL
OF CALIFORNIA

A REVIEW OF
THE CALIFORNIA AIR NATIONAL GUARD'S
144TH FIGHTER INTERCEPTOR WING

REPORT BY THE
OFFICE OF THE AUDITOR GENERAL

P-822

A REVIEW OF THE CALIFORNIA AIR NATIONAL GUARD'S
144TH FIGHTER INTERCEPTOR WING

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Acting Auditor General

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P-822

Honorable Elihu M. Harris, Chairman
Members, Joint Legislative
Audit Committee
State Capitol, Room 2148
Sacramento, California 95814

Dear Mr. Chairman and Members:

The Office of the Auditor General presents its report concerning the California Air National Guard's 144th Fighter Interceptor Wing (FIW). The report discusses our review of the 144th Fighter Interceptor Wing's management of its aircraft maintenance, aircrew training, and flight safety activities. Specifically, the report concludes that the 144th FIW is currently managing these activities according to Air Force and Air National Guard regulations.

Respectfully submitted,

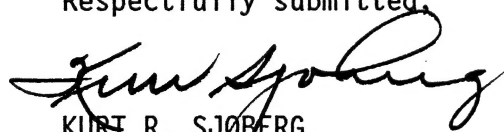

KURT R. SJØBERG
Acting Auditor General

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SUMMARY

RESULTS IN BRIEF

The 144th Fighter Interceptor Wing (FIW) is an air defense unit within the California Air National Guard. As with other Air National Guard units, the FIW has a state and a federal mission. If the FIW is called to active duty as part of its federal mission, it is assigned to serve under the Tactical Air Command (TAC) of the United States Air Force.

In June 1987, the FIW suffered a fatal accident involving one of its F-4 aircraft. The Air Force investigated the accident. However, the adjutant general of the California Military Department stated that, according to Air Force regulations, he could not provide us with all documents concerning the Air Force's investigation of the accident because he does not have the authority to release the documents. He also stated that those Air Force officials who do have the authority to release the documents claimed executive privilege not to release them, in accordance with federal statutes. However, the Air National Guard did its own investigation of the accident and was able to provide us with a copy of its report. The report did not conclude on the cause of the accident. However, it did state that the pilot was qualified to fly the aircraft although he was not up-to-date in his training requirements to fly the scheduled low-altitude portion of the flight. The report also concludes that the pilot logged into his training records low-altitude training events that he did not actually fly. This made it appear as though he was up-to-date in his required training and, therefore, qualified to fly the scheduled low-altitude portion of the flight on the day of the accident.

We requested from the Air National Guard records covering the FIW's management of its aircrew training, aircraft maintenance, and flight safety activities for the period of time both before and after the accident. However,

most of the records from the period of time before the accident had already been disposed of in accordance with Air Force regulations. The records that did exist were either not available to us or were not complete enough for us to review. Therefore, we could not independently verify the adequacy of the FIW's aircrew training, aircraft maintenance, or flight safety activities before October 1, 1987, the beginning of federal fiscal year 1987-88. (Air Force regulations require that most of a unit's records regarding those aircraft maintenance, aircrew training, and flight safety activities that we reviewed be disposed of within 12 months of the time that the records were initially created.) However, we did review reports of inspections, evaluations, and certain investigations that the Air Force, the National Guard Bureau, and the California Military Department conducted at the FIW during the period of time from January 1985 through September 1987, the period of time before and immediately after the June 1987 accident. These reports indicate that the FIW was effectively managed.

In addition, we were able to audit the FIW's management of its aircraft maintenance, aircrew training, and flight safety activities for various periods of time that we selected for our review from October 1987 through January 1989. For those periods of time that we reviewed, the FIW managed those aspects of its aircraft maintenance, aircrew training, and flight safety activities in our sample in accordance with Air Force and Air National Guard regulations and directives.

BACKGROUND

The FIW, located in Fresno, California, is an air defense unit within the California Air National Guard. The Air National Guard has a state mission and a federal mission. Through its state mission, the Air National Guard can be called into service to respond to civil disturbances or natural disasters. The Air National Guard's federal mission primarily is to prepare for combat in the event that it is called to active military duty to augment

regular military units. Using F-4 aircraft, the FIW's air defense mission is to detect, intercept, identify, and, if necessary, destroy enemy aircraft. The FIW also maintains aircraft on continuous alert to defend the airspace along the west coast of the United States.

As with active Air Force units, the FIW is periodically inspected and evaluated by Air Force inspection teams, which assess the FIW's ability to meet its federal mission. The FIW is also subject to investigation by the National Guard Bureau and the inspector general of the California Military Department.

PRINCIPAL FINDINGS

We Could Not Independently Verify the Adequacy
of the FIW's Aircraft Maintenance, Aircrew
Training, or Flight Safety Activities From
January 1985 Through September 1987
Because Complete Records Were Not Available

We requested from the Air National Guard records covering the FIW's management of its aircrew training, aircraft maintenance, and flight safety activities for the period from January 1985 through September 1987, the period of time before and immediately after the June 1987 accident. However, most of the records from the period of time before the accident had already been disposed of in accordance with Air Force regulations. The records that did exist were either not available to us or were not complete enough for us to review. Therefore, we could not independently verify the adequacy of the FIW's aircrew training, aircraft maintenance, or flight safety activities before October 1, 1987. (Air Force regulations require that most of a unit's records regarding those aircraft maintenance, aircrew training, and flight safety activities that we reviewed be disposed of within 12 months of the time that the records were initially created.) However, we did obtain from the California Military Department copies of reports of each of the inspections and evaluations that had

been performed on the FIW from January 1985 through September 1987. We also obtained copies of reports of certain investigations that had been performed on the FIW during this period. The California Military Department was not able to provide us with reports for all investigations that were conducted during this period. According to the adjutant general of the California Military Department, these records are the property of the Air Force, which in accordance with Air Force regulations, denied us access to some of them. Some of the reports of inspections, evaluations, and investigations addressed the FIW's aircraft maintenance, aircrew training, and flight safety activities.

Air Force reports for three inspections and one program evaluation of the FIW rate the FIW as at least satisfactory and in most cases excellent, which means that, in most cases, the FIW exceeded Air Force mission requirements.

Moreover, two 1986 investigation reports, the first conducted by the California Military Department and the second conducted by the National Guard Bureau, addressed various allegations of improprieties and mismanagement at the FIW. The first investigation partially substantiated three of the allegations and also made three recommendations. According to the deputy adjutant general for the air division of the California Military Department, the California Military Department implemented each of these recommendations. The second investigation, conducted by the National Guard Bureau, concluded that there is no need for concern about the management of the FIW and that the FIW is a unit well qualified to perform its mission.

Between October 1987 and January 1989
the FIW Managed Its Aircraft Maintenance,
Aircrew Training, and Flight Safety
Activities in Accordance With
Air Force and Air National Guard
Regulations and Directives

For various periods of time that we selected
for our review from October 1987 through
January 1989, the FIW managed those aspects of

its aircraft maintenance, aircrew training, and flight safety activities in our sample in accordance with Air Force and Air National Guard regulations and directives. The FIW complied with Air Force and Air National Guard regulations and directives for maintaining its aircraft by preparing weekly maintenance plans, completing Time Compliance Technical Orders within the deadlines specified by the Air Force, periodically inspecting its aircraft, and keeping delayed maintenance on its aircraft to a minimum.

Also, the FIW's quality assurance staff inspected the operations of six of the seven maintenance functions and properly obtained a waiver from inspecting the seventh function. In addition, the quality assurance staff complied with FIW procedures for conducting functional check flights for the FIW's aircraft after maintenance has been completed. Furthermore, the quality assurance staff properly assessed aircraft suspected of having been damaged from overstress during flight. In summary, the FIW maintained its aircraft so that it was able to meet its flight training and air defense alert commitments.

Moreover, we determined that the FIW complied with Air Force requirements for providing training to its aircrews. During our review, we focused on three of the Air Force's requirements for conducting aircrew training. We found that, from July through December 1988, a sample of 7 of the FIW's 39 pilots and 2 of the 28 weapons systems officers all flew the required number of flights for each training event. In addition, the FIW's pilots were qualified to fly each of the training events that we reviewed. Further, all training records that we reviewed were accurate.

Furthermore, from October 1987 through September 1988, the FIW complied with Air National Guard regulations by properly informing aircrews of flight safety information, developing procedures for distributing mishap reports, and reporting aircraft mishaps. Finally, as part of our review, we also obtained from the California Military Department copies of each of the reports of inspections and evaluations that had

been performed on the FIW from October 1987 through December 1988. One of these reports addressed the FIW's maintenance activity, and one of the reports addressed aircrew training. Both of the reports rated the FIW as "excellent." An excellent rating signifies that the FIW exceeded Air Force mission requirements.

AGENCY COMMENTS

The adjutant general of the California Military Department substantially agrees with the conclusions contained in this report.

INTRODUCTION

The 144th Fighter Interceptor Wing (FIW), located in Fresno, California, is an air defense unit within the California Air National Guard. As with the California Army National Guard, the California Air National Guard is part of California's Military Department, which is headed by the California adjutant general. The California adjutant general is appointed by the governor with the advice and consent of the Senate and has his headquarters in Sacramento.

The Air National Guard has a state and a federal mission. Through its state mission, the governor, under certain conditions, may call the Air National Guard into active service to respond to such incidents as civil disturbances or natural disasters.

The Air National Guard's federal mission primarily is to prepare for combat in the event that the Air National Guard is called to active military duty to augment active military units. Specifically, using the F-4 aircraft, the FIW's air defense mission is to detect, intercept, identify, and, if necessary, destroy enemy aircraft. If the FIW is called to active duty, it is assigned to serve under the Tactical Air Command (TAC) of the United States Air Force. The TAC is one of the major command organizations of the Air Force. It is responsible for establishing the training standards that the FIW must follow to ensure that the air defense unit is prepared to perform

its air defense mission. Also, the TAC conducts periodic inspections and evaluations of the FIW to determine whether the unit is meeting training standards and to ensure that it is adhering to Air Force and TAC regulations.

In addition, because the FIW is an Air National Guard unit, the FIW must follow Air National Guard regulations as well as certain Air Force regulations. Consequently, the FIW is subject to investigations by the National Guard Bureau and the California Military Department and inspections by an inspector general of the TAC.

Under the direction of its wing commander, the FIW focuses on meeting its military training requirements during monthly training assemblies and other training sessions. Between training periods, however, the FIW continues to operate under the direction of an air commander, who oversees a full-time work force that is responsible for carrying out the daily operating requirements and administrative tasks of the unit, maintaining the unit's equipment, and preparing the unit for training periods.

THE FIW SUFFERED A FATAL AIRCRAFT ACCIDENT IN JUNE 1987

A fatal accident in June 1987 involving one of the FIW's F-4 aircraft and allegations of mismanagement at the FIW made at the confirmation hearings for the adjutant general of the California

Military Department raised questions about the overall management of the California Air National Guard and the FIW. The Air Force and the Air National Guard investigated the accident. The purpose of the Air Force investigation was to determine the causes of the accident to prevent future accidents whereas the purpose of the Air National Guard investigation was to obtain and preserve evidence about the accident for use in settling claims or litigation and for use in possible disciplinary or administrative actions. We asked the adjutant general to provide us with all documents concerning the Air Force's investigation of the accident, but he could not legally satisfy our request. The adjutant general stated that, according to Air Force regulations, he does not have the authority to release federally controlled documents. According to the adjutant general, the Air Force officials who have the authority to release these documents have claimed executive privilege not to release the documents in accordance with federal statutes. (We did receive a copy of what appears to be an interim report on the Air Force's investigation of the June 1987 accident. However, we did not receive this report from the California Air National Guard or the Air Force, so we cannot be sure of its authenticity. We do not discuss its contents in our report.)

However, the Air National Guard was able to provide us with a copy of a report that summarizes its own investigation of the accident. Although the report did not conclude on the cause of the accident, it does state that the pilot's training records showed that he met the minimum flying requirements; in other words, the pilot was

qualified to fly the aircraft. However, the pilot was not up-to-date in his training requirements to fly the scheduled low-altitude portion of the flight. The report also concludes that the pilot logged into his training records low-altitude training events that he did not actually fly. This made it appear as though he was up-to-date in his required training and, therefore, qualified to fly the scheduled low-altitude portion of the flight on the day of the accident.

For the period from January 1985 through September 1987, the period of time before and immediately after the accident, we requested from the Air National Guard records concerning the FIW's management of its aircrew training, aircraft maintenance, and flight safety activities. However, most of these records had already been disposed of in accordance with Air Force regulations. The records that did exist were either unavailable to us or were not complete enough for us to review. Therefore, we could not independently verify the adequacy of the FIW's aircraft maintenance, aircrew training, or flight safety activities before October 1, 1987, the beginning of federal fiscal year 1987-88. (Air Force regulations require that most of a unit's records regarding those aircraft maintenance, aircrew training, and flight safety activities that we reviewed be disposed of within 12 months of the time that the records were initially created.) However, we did obtain from the California Military Department copies of reports for inspections, evaluations, and certain investigations that had been performed on the FIW during the period of time from January 1985 through September 1987. Some of these reports addressed the FIW's

aircraft maintenance, aircrew training, and flight safety activities. We also reviewed certain limited information on flight safety and maintenance for the same period from data that we gathered from the Air Force Inspection and Safety Center and from the FIW's files.

A COMPARISON OF THE MISHAP RATE
OF THE FIW WITH THE MISHAP RATE
OF THE AIR FORCE IS MISLEADING

One of the purposes of our review was to determine whether the FIW had an aircraft mishap rate for F-4s that was significantly higher than the mishap rate for F-4s of other Air Force and Air National Guard units. To address this question, we first obtained from the Air Force Inspection and Safety Center information on mishaps at all other Air Force and Air National Guard units that fly F-4s. This information covers federal fiscal year 1985-86 through federal fiscal year 1987-88. The information that the Inspection and Safety Center provided us showed that all Air Force and Air National Guard units (other than the FIW) operating F-4 aircraft had a Class A mishap rate that ranged from 1.11 mishaps to 4.12 mishaps for every 100,000 hours of F-4 flying time from federal fiscal year 1985-86 through federal fiscal year 1987-88. (According to Air Force regulations, a Class A mishap "is an accident involving personal injury, occupational illness, or property damage equal to or greater than \$500,000, fatality or permanent total disability for personnel or destruction of aircraft, or aircraft damage beyond economical repair.")

In federal fiscal years 1985-86 and 1987-88, the FIW experienced no Class A mishaps. However, in federal fiscal year 1986-87, the FIW experienced one Class A mishap during the total of 4,865 hours that it flew, resulting in a mishap rate of 20.6 mishaps per 100,000 hours of flying time. Although the FIW's 1987 mishap rate was 20.6 while the 1987 mishap rate for all other F-4 units was 4.12 for every 100,000 hours of flying time, this comparison is misleading. The mishap rate of 20.6 is not a reflection of the FIW's actual mishap experience. Rather, it is a mathematical projection to 100,000 flying hours of the FIW's Class A mishap rate during 4,865 actual flying hours. In other words, any Air National Guard or Air Force unit that has one accident in 4,865 flying hours would have a mishap rate of 20.6.

The FIW's mishap occurred during 4,865 actual flying hours whereas the nine mishaps experienced by all other units occurred during 218,473 actual flying hours. The Air Force warns users of its mishap data to use mishap rates with care and to understand the limitations of mishap rates computed from a small data base, such as the FIW's limited number of actual flying hours during federal fiscal year 1986-87. Air Force regulations state that "when the data base is small, a few mishaps can cause large changes in rates and make it difficult to determine trends."

Additionally, the chief of the Reports and Analysis Division of the Air Force Inspection and Safety Center cautions against comparing the overall Air Force and Air National Guard mishap rate with the FIW mishap rate. He concludes that comparisons are statistically questionable because of differences throughout the Air Force in operating environments, missions, and personnel.

SCOPE AND METHODOLOGY

The purpose of this audit was to evaluate the FIW's management of its aircraft maintenance, aircrew training, and flight safety activities. Records were available that enabled us to review the FIW's management of these activities during various periods of time that we selected for our review from October 1987 through January 1989, but we were limited in our review of the FIW's performance before October 1, 1987. The FIW did have limited records available on maintenance activity and on aircraft mishaps before October 1, 1987. During our audit, we reviewed the limited records that were available on the FIW's maintenance activity. However, because of the limited records, we could not assess the effectiveness of the FIW's maintenance activity before October 1, 1987. Additionally, the California Military Department could not permit us to examine any of its mishap reports on its aircraft, including those reports that existed before or after October 1, 1987. The adjutant general stated that, according to Air Force regulations, he does not have the authority to release federally controlled records such as these Air Force mishap reports.

Moreover, we did not review the records of aircrew training and flight safety meetings because the FIW disposed of the records in accordance with regulations. However, we did obtain from the California Military Department copies of reports of each of the inspections and evaluations that had been performed on the FIW from January 1985 through September 1987. We also obtained copies of reports of certain investigations that had been performed on the FIW during this period. Some of these inspection, evaluation, and investigation reports address how the FIW managed its aircraft maintenance, aircrew training, and flight safety activities before October 1, 1987.

For various periods that we selected to review from October 1987 through January 1989, we tested the FIW's compliance with specific Air Force and Air National Guard regulations that relate to aircraft maintenance, aircrew training, and flight safety activities. To evaluate the FIW's maintenance activity, we focused on the FIW's responsibilities for planning, scheduling, and completing required maintenance on its aircraft. As part of this maintenance evaluation, we reviewed a sample of 9 of 52 weekly maintenance plans to determine whether the FIW complied with Air National Guard regulations in preparing the maintenance plans. We also determined whether the FIW completed Time Compliance Technical Orders (technical orders) by specified deadlines for 10 of 20 of the FIW's aircraft and whether the FIW completed aircraft inspections within the required time periods. (A technical order specifies a "onetime" maintenance change that must be made to Air Force systems, equipment, materials, munitions, or

computer programs. The technical order also specifies a deadline for accomplishing the change.) In addition, we determined whether the FIW controlled the number of delayed maintenance discrepancies on its aircraft. (A delayed maintenance discrepancy is a defect that the FIW cannot correct in a reasonable amount of time because it lacks parts, personnel, or facilities.)

As an additional element of our maintenance review, we evaluated the FIW's quality assurance program. For calendar year 1988, we reviewed reports of inspections that quality assurance program staff conducted of the FIW's maintenance functions to determine whether the quality assurance staff complied with Air National Guard regulations. We also evaluated whether quality assurance staff followed the proper procedures for inspecting aircraft when the staff suspected aircraft of being overstressed during flights. We also determined whether the FIW's safety office submitted mishap reports on the overstressed aircraft to the Air Force Inspection and Safety Center as required. Moreover, we observed four functional check flight briefings and debriefings and reviewed appropriate records to determine whether the FIW conducted functional check flights in accordance with its own procedures.

As a final element of our maintenance review, we determined whether the FIW maintained its aircraft so that it could meet its air defense alert commitments and have sufficient numbers of aircraft for

its pilots to fly the required hours and flights for aircrew training purposes during federal fiscal year 1987-88.

To evaluate the FIW's aircrew training program, we determined whether the pilots met the requirements to perform training events on a day we selected in 1988. Additionally, for a sample of pilots and weapons systems officers, we determined whether these individuals met their flight training requirements during the training cycle from July through December 1988. Finally, we tested the accuracy of the flight training records for the FIW's pilots and weapons systems officers for 12 of the 248 training days in calendar year 1988.

To evaluate the FIW's flight safety program, we reviewed the FIW's flight safety procedures and flight safety records to determine whether the FIW fulfilled Air Force and Air National Guard regulations. To determine whether the FIW reported aircraft mishaps as required, we reviewed the FIW's mishap report logs and confirmed that the FIW properly reported aircraft mishaps to the Air Force Inspection and Safety Center. For federal fiscal year 1985-86 through federal fiscal year 1987-88, we also obtained mishap data from the Air Force Inspection and Safety Center for all Air Force and Air National Guard units that operate F-4 aircraft.

AUDIT RESULTS

I

**WE COULD NOT INDEPENDENTLY VERIFY THE ADEQUACY
OF THE 144TH FIGHTER INTERCEPTOR WING'S
AIRCRAFT MAINTENANCE, AIRCREW TRAINING,
OR FLIGHT SAFETY ACTIVITIES FROM
JANUARY 1985 THROUGH SEPTEMBER 1987
BECAUSE COMPLETE RECORDS WERE NOT AVAILABLE**

We requested from the Air National Guard records covering the 144th Fighter Interceptor Wing's (FIW) management of its aircrew training, aircraft maintenance, and flight safety activities for the period from January 1985 through September 1987. However, most of these records had been disposed of in accordance with Air Force regulations. The records that did exist were either not available to us or were not complete enough for us to review. Therefore, we could not independently verify the adequacy of the FIW's aircraft maintenance, aircrew training, or flight safety activities before October 1, 1987, the beginning of federal fiscal year 1987-88. (Air Force regulations require that most of a unit's records regarding those aircraft maintenance, aircrew training, and flight safety activities that we reviewed be disposed of within 12 months of the time that the records were initially created.) Nevertheless, we did obtain from the California Military Department copies of reports of each of the inspections and evaluations and certain investigations that had been performed on the FIW from January 1985 through September 1987. However, the California Military Department was not able to provide us with reports for all investigations that were conducted during this

period. The adjutant general of the California Military Department stated that, according to Air Force regulations, these records are the property of the Air Force, which, in accordance with Air Force regulations, has denied us access to some of the investigation reports. Some of the reports that we obtained of the inspections, evaluations, and investigations addressed the FIW's aircraft maintenance, aircrew training, and flight safety activities. Air Force reports for three inspections and one program evaluation of the FIW rate the FIW as at least satisfactory and in most cases excellent. According to Air Force criteria, "satisfactory" is the third highest and "excellent" is the second highest rating in a five-tier rating system. A rating of excellent means that the FIW exceeded Air Force mission requirements. Additionally, we reviewed investigative reports by the California Military Department and the National Guard Bureau. In 1986, each conducted separate investigations of various allegations of improprieties and mismanagement at the FIW. The first investigation, which was conducted by the inspector general of the California Military Department, partially substantiated three of the eight allegations. The inspector general made three recommendations to address the improper actions that the investigation team noted. According to the deputy adjutant general for the air division of the California Military Department, the California Military Department implemented each of these recommendations. The second investigation, by the National Guard Bureau, concluded that there is no need for concern about the management of the FIW and that the FIW is a unit well qualified to perform its mission.

In August 1985, the Air Force conducted one operational readiness inspection of the FIW. This type of inspection is designed to assess the ability of an Air Force unit to perform its assigned mission, which in the case of the FIW is the defense of the United States' airspace, including the identification, interception, and destruction of airborne enemy objects. For the readiness of the FIW overall and for the readiness of the FIW's maintenance program, the inspection team rated the FIW as "excellent." An excellent rating means that the FIW's ability to rapidly prepare for combat and to conduct combat operations exceeds mission requirements and that the FIW's procedures and activities are conducted in a superior manner. According to Air Force criteria, an excellent rating is the second highest rating in a five-tier rating system. The 1985 operational readiness inspection did not rate the FIW's aircrew training or its flight safety program.

In March 1985 and again in November 1986, the Air Force conducted a management effectiveness inspection of the FIW. These inspections are designed to evaluate the effectiveness of an Air Force unit's management of its daily operations and cover most, if not all, of the unit's activities. Although the inspection teams review a unit's compliance with Air Force regulations, the teams are also directed to look at factors other than compliance with regulations. As a result, a management effectiveness inspection can include determinations as to whether a unit's management has a system for measuring the effectiveness of the unit's performance, and if so, the

extent of its use, whether the unit has implemented any innovative suggestions that could improve its performance, and whether any situations of fraud, waste, or mismanagement exist within the unit. The Air Force inspectors use the same rating system for the management effectiveness inspections as they do for the operational readiness inspections. For both of the management effectiveness inspections, the inspection teams rated the FIW as excellent for its overall management of all activities that the teams reviewed. Also, during each of these inspections, the inspection teams rated the FIW satisfactory or excellent for its management of aircraft maintenance, aircrew training, and flight safety activities.

In addition to the operational readiness and management effectiveness inspections, the Air Force conducted an evaluation of the aircrew training program of the FIW in November 1986. The purpose of this evaluation was to assess the capability of the FIW's flight instructors to instruct and evaluate aircrew members and to evaluate the capability of aircrew members to perform the unit mission. This evaluation also reviewed the FIW's compliance with various Air Force administrative, recordkeeping, and operational procedures. The evaluation team rated the FIW as excellent.

The FIW was also the subject of an investigation by the California Military Department's inspector general in June 1986. The inspector general, assisted by an Air Force officer from Homestead Air Force Base in Florida, investigated allegations of improprieties at the

FIW made through calls to an Air Force telephone hotline. The inspector general could not substantiate five of the eight allegations, including an allegation that aircrew training records had been falsified, that pilots of the FIW flew unauthorized flights, and that aircrews were directed to fly in unsafe conditions.

However, the inspector general partially substantiated three of the eight allegations. These allegations were that aircrews of the FIW flew an unauthorized flyover (a formation of aircraft flying over a fixed point at a specified time), that the FIW scheduled an inappropriate flying mission for an aircraft that allegedly had been damaged during a prior flight, and that a pilot damaged an aircraft and failed to report it. In the case of the flyover, the inspector general determined that the FIW had obtained approval for the flight from the adjutant general of the California Military Department, in accordance with an Air National Guard regulation. However, the inspector general partially substantiated the allegation, stating in his report that National Guard Bureau approval was not obtained as required by Air Force regulations. According to the inspector general, the approval requirements for the flyover were unclear because of a conflict in Air National Guard and Air Force regulations. The inspector general recommended that the National Guard Bureau change the Air National Guard regulation for flyovers to conform with the Air Force regulation and that the adjutant general reemphasize the need to adhere to Air Force regulations in obtaining permission to conduct flyovers.

In the case of the inappropriate flight of an allegedly damaged aircraft, the inspector general did not substantiate that the aircraft had been overstressed or that the aircraft had been damaged. However, the inspector general did partially substantiate the validity of the allegation. After maintenance personnel inspect an aircraft that is suspected of having been overstressed in flight, the first flight of the aircraft after the inspection may be a functional check flight. A functional check flight serves as an extra precaution to ensure that an aircraft is airworthy and that all systems function properly before the aircraft is released to resume its normal flying assignments. However, in this instance, after the maintenance personnel inspected the aircraft, the FIW flew a functional check flight but combined the check flight with a training flight. As a result of the investigation, the inspector general recommended that the commander of the California Air National Guard reemphasize that functional check flights and training flights not be combined.

In the case of the allegation of the pilot not reporting damage to an aircraft, the inspector general partially substantiated the allegation. He substantiated that the aircraft did sustain minor damage. However, according to Air Force regulations, it was not reportable to the Air Force because the cost to repair the aircraft did not exceed the minimum dollar amount required to report the mishap. The pilot did report the aircraft damage to the FIW's maintenance organization and the aircraft was correctly repaired.

According to the deputy adjutant general for the air division of the California Military Department, the California Military Department implemented each of the recommendations that addressed the improper actions that the investigation team noted.

In August 1986, at the request of a California congressman, the National Guard Bureau created a special investigation group to conduct an investigation into safety practices and operations management at the FIW. This group also investigated the same allegations against the FIW that the inspector general of the California Military Department investigated in 1986. The group was led by a high-ranking National Guard officer and included three other National Guard officers from other states. The group reviewed aircraft records, flight evaluations, and training records and interviewed aircrews, senior managers, and other members of the FIW. The group concluded that there is no need for concern about the management of the FIW and that the FIW is well qualified to perform its mission. Moreover, although the group did point out in its report that the FIW had made some mistakes, it also noted that the FIW had taken corrective action to ensure that these mistakes were not repeated.

II

**BETWEEN OCTOBER 1987 AND JANUARY 1989
THE 144th FIGHTER INTERCEPTOR WING
MANAGED ITS AIRCRAFT MAINTENANCE,
AIRCREW TRAINING, AND FLIGHT SAFETY ACTIVITIES
IN ACCORDANCE WITH AIR FORCE AND
AIR NATIONAL GUARD REGULATIONS AND DIRECTIVES**

For the various periods of time that we selected for our review from October 1987 through January 1989, the 144th Fighter Interceptor Wing (FIW) managed those aspects of its aircraft maintenance, aircrew training, and flight safety activities in our sample in accordance with Air Force and Air National Guard regulations and directives. The FIW complied with Air Force and Air National Guard regulations and directives for maintaining its aircraft by preparing weekly maintenance plans, completing Time Compliance Technical Orders within the deadlines specified by the Air Force, periodically inspecting its aircraft, and keeping delayed maintenance on its aircraft to a minimum. Moreover, the FIW's quality assurance staff inspected the operations of six of the seven maintenance functions and appropriately obtained a waiver from inspecting the seventh function. Also, the quality assurance staff complied with FIW procedures for assuring that functional check flights were completed for the FIW's aircraft after maintenance had been completed. Furthermore, the quality assurance staff properly assessed aircraft suspected of having been damaged from overstress during flight. In summary, the FIW maintained its aircraft so that it was able to meet its flight training and air defense alert commitments.

The FIW also complied with Air Force requirements for providing training to its aircrews. The Air Force's Tactical Air Command (TAC) has established specific training requirements for aircrews, such as those of the FIW, that fly the F-4 on air defense missions. (An aircrew for the F-4 consists of a pilot and a weapons systems officer.) During our review, we focused on three of the TAC's requirements for conducting aircrew training. We determined that, from July through December 1988, each of the 7 pilots and 2 weapons systems officers in our sample flew the required number of flights for each training event. In addition, the FIW's pilots were qualified to fly each of six training events. (We could not confirm whether one pilot was qualified to fly one training event because the records covering one of the six training events for that pilot had been disposed of. Disposal of these records was in accordance with Air Force regulations.) Finally, all training records that we reviewed were accurate.

In addition, the FIW has established a flight safety program that complies with Air Force and Air National Guard regulations. From October 1987 through September 1988, the FIW complied with Air National Guard regulations by properly informing aircrews of flight safety information. Additionally, the FIW developed procedures for distributing mishap reports to other organizations, as well as to units within the FIW. Finally, the chief of safety appropriately reported to the Air Force's Inspection and Safety Center 11 aircraft mishaps costing from \$10,000 to \$100,000 or involving eight hours or more of lost work time.

As part of our review, we also obtained from the California Military Department copies of each of the reports of inspections and evaluations that had been performed on the FIW from October 1987 through December 1988. One of these reports addressed the FIW's maintenance activity, and one of the reports addressed aircrew training. Both of the reports rated the FIW as "excellent." An excellent rating signifies that the FIW exceeded Air Force mission requirements.

THE FIW PREPARED COMPLETE WEEKLY MAINTENANCE PLANS

To meet its commitment for providing aircraft to its aircrews for training and air defense alert commitments, the FIW must perform regular maintenance on its complement of F-4 aircraft. To ensure that the FIW's maintenance activity is well planned and scheduled, the FIW publishes a weekly maintenance plan, which communicates essential information to personnel throughout the unit and schedules aircraft, maintenance tasks, equipment, and personnel during the week.

We reviewed a sample of 9 of the 52 weekly plans that the FIW prepared from October 1987 through September 1988. The focus of our review was to determine whether the FIW had complied with the Air National Guard's regulations that require a unit's maintenance plans to contain certain elements. Air National Guard regulations require that the weekly maintenance plan list, at a minimum, the flying schedule for

the week; the maintenance tasks to be accomplished for each aircraft; the various meetings to be held among unit personnel; the amount of fuel, oil, and other lubricants to be used; any special supplies or equipment to be used; any revisions to maintenance procedures; and any aircraft that personnel will need for training purposes. All 9 weekly plans that we reviewed contained each of these required elements.

THE FIW COMPLETED TIME COMPLIANCE
TECHNICAL ORDERS BY THE
ESTABLISHED DEADLINES

To accomplish onetime changes to Air Force systems, equipment, materials, munitions, or computer programs, the Air Force sends instructions to its units and units of the Air National Guard through a Time Compliance Technical Order (technical order). A technical order specifies a change that must be accomplished. For example, the Air Force used the technical order process when it added to certain of its aircraft an engine overheat detector and a voice warning system to provide an audio warning to the aircrew in the event of a fire aboard the aircraft. A technical order also specifies a deadline for accomplishing the change.

One technical order can apply to more than one aircraft. A technical order can often apply to all aircraft of the same type. For the purposes of our audit, if one technical order on file was applicable to all ten aircraft in our sample, we counted it as ten

technical orders. Hence, we arrived at a total of 241 technical orders that were associated with the ten aircraft in our sample as of September 29, 1988.

Deadlines for the technical orders varied depending on several circumstances, such as when the FIW received the technical order and whether the FIW had the parts on hand to complete it. Also, the Air Force allows a maintenance section to postpone some technical orders until the next appropriate maintenance event occurs on an aircraft so that the technical order can be accomplished at the same time as the next maintenance event. For example, the completion of one technical order that was applicable to all ten of the aircraft in our sample required that the left-side engines of the aircraft be removed to make the required modifications. Rather than requiring the FIW to remove the aircraft from service to complete the technical order immediately, the technical order allowed the FIW to accomplish the work the next time that the aircraft could be scheduled to have their left-side engines removed as part of the next maintenance event.

We determined that the FIW completed all of the technical orders that it was possible for it to complete within the deadlines specified by the Air Force. By the time of our review ending December 1, 1988, the FIW had completed 204 of the 241 technical orders within the specified deadlines. For example, one technical order for the modification of some aircraft canopy seals was to be accomplished in 90 days from receipt of the technical order or the required parts.

The FIW received parts for one aircraft on November 17, 1987, and it completed the modification 73 days later. For the remaining 37 technical orders that had not yet been accomplished, the FIW was either awaiting parts that it needed to accomplish the technical orders or was awaiting the next appropriate maintenance event to accomplish the technical orders.

THE FIW MET THE AIR FORCE'S REQUIREMENTS
FOR PERIODICALLY INSPECTING ITS AIRCRAFT

Air Force directives require that maintenance personnel perform certain maintenance inspections and maintenance tasks on the aircraft at specified intervals during the life of the aircraft. The purpose of these periodic inspections is to ensure that maintenance personnel discover and correct any defects that may occur on an aircraft before these defects lead to serious problems. Air Force directives specify that the F-4 aircraft be inspected at intervals of 100, 200, 300, and 600 flying hours. The interval between the inspections is intended to be the longest period of time that an item or component can safely operate without being inspected.

The aircraft components inspected at the 100-hour inspection may vary from those components inspected at the 600-hour inspection. For example, during the 100-hour inspection, the inspector must inspect three areas in the aircraft cockpits: the controls, the cockpit floors and panels for cracks, and the cockpit drains for obstructions and cracks. Meanwhile, at the 600-hour inspection, the inspector must

perform a more comprehensive inspection of the cockpit. The 600-hour inspection also includes operational checks of individual components of the canopy and the emergency escape systems. In addition, during the 600-hour inspection, some cockpit components are disassembled, inspected, cleaned, lubricated, and reassembled.

Air Force regulations regarding the retention of records require units to destroy records of periodic inspections when the records are no longer needed. As a result, the FIW keeps only the last record of a periodic inspection for each aircraft. We reviewed the most recent inspection files for the ten aircraft in our sample to determine whether the FIW had performed the last required inspection on the aircraft at the specified number of flying hours. For eight of the ten aircraft, the inspection records indicate that maintenance personnel had performed the required inspections before the specified number of flying hours had elapsed. In the other two cases, the inspection records indicate that maintenance personnel performed the inspections at 1.4 and 1.1 hours past the deadline, respectively. These delays would be permissible if before taking off on the last flight before the inspection deadline, neither of these two aircraft had reached the specified number of flying hours for inspection. Although aircraft records are no longer available, the supervisor of maintenance control said that these two aircraft reached the deadline while in flight. He also stated that, once these flights were completed, both aircraft were inspected as required.

THE FIW IS MEETING ITS GOAL OF
KEEPING TO A MINIMUM THE AMOUNT OF
DELAYED MAINTENANCE ON ITS AIRCRAFT

Air National Guard regulations recognize that certain maintenance that is needed on an aircraft cannot always be accomplished immediately. Sometimes needed parts are not on hand, or personnel with special expertise are not readily available to accomplish the required maintenance tasks. In addition, in some cases, it may be more efficient to defer a maintenance task until the next major maintenance event. For example, a minor deficiency that, to correct, requires the removal of an engine might be deferred to coincide with the next time that the FIW removes the engine on that aircraft for other purposes. However, the Air National Guard also recognizes the need to keep to a minimum the amount of maintenance that is being deferred. For this reason, the Air National Guard regulations require maintenance units to maintain a file that contains a list of all delayed maintenance items on all of its aircraft. The Air National Guard regulations call this file the "delayed-deferred discrepancy" file, and for the purposes of this report, each item of delayed maintenance is called a "delayed discrepancy." The Air National Guard regulations define delayed discrepancies as malfunctions or deficiencies that cannot be corrected within a reasonable amount of time because of a shortage of manpower, parts, facilities, or equipment.

The Air Force has not established a specific limit for the FIW on the number of delayed discrepancies that it will allow, but the deputy commander for maintenance for the FIW has established his own goals for the unit. The deputy commander's goal is to have no more than an average of 6 delayed discrepancies per aircraft at any one time, or a total of 120 delayed discrepancies for all aircraft (since the FIW maintained a total of 20 aircraft at the time of our audit). In establishing this goal, the deputy commander said that he took into account the age of the FIW's aircraft and his personal experience in managing such discrepancies. According to the deputy commander, he establishes his own goal as a way of stressing to all maintenance personnel the importance of correcting delayed discrepancies as promptly as circumstances allow.

We reviewed the extent to which the FIW met its goal of keeping the number of delayed discrepancies to an average of no more than 6 per aircraft. Since the FIW does not keep a historical record of delayed discrepancies that have been repaired, we selected one day during our audit and determined the number of delayed discrepancies that existed for our sample of ten aircraft. However, on January 4, 1989 (the day that we selected), the FIW could provide information on delayed discrepancies for only seven of the ten aircraft. According to an official of the maintenance organization, two of the aircraft and the records for these aircraft were located at another air base during the time that we performed these audit steps.

The official further stated that the third aircraft and its records were being transferred to storage, and therefore, the records were not available.

The records for the seven aircraft showed that, on January 4, 1989, the FIW had a total of 16 delayed discrepancies, or an average of 2.3 delayed discrepancies per aircraft. Three of the seven aircraft had 5 delayed discrepancies, one aircraft had one delayed discrepancy, and the remaining three aircraft had no delayed discrepancies. Based on this information, the FIW is meeting its goal of keeping delayed discrepancies to an average of no more than 6 per aircraft.

THE QUALITY ASSURANCE STAFF OF THE
FIW'S MAINTENANCE ORGANIZATION
CORRECTLY INSPECTED THE MAINTENANCE
FUNCTIONS OF THE FIW DURING 1988

The responsibilities of the quality assurance staff of the FIW's maintenance organization include verifying that maintenance repairs are properly completed and that maintenance personnel are properly trained. Until July 1988, Air National Guard regulations required the quality assurance staff to inspect the maintenance functions of the FIW's maintenance organization at least once each year. In July 1988, the Air National Guard regulations changed to allow the deputy commander for maintenance to determine when the inspections would occur. The focus of these inspections is to

determine whether each of the functions complies with management directives and Air Force and Air National Guard regulations. The seven functions that comprise the FIW's maintenance organization each cover a specific type of maintenance activity. For example, one of the functions is to maintain the aircraft's electronic instruments while another function is to maintain the aircraft's propulsion system.

Air National Guard regulations require that the quality assurance staff use ratings from outstanding to unsatisfactory, identify discrepancies as major or minor, make recommendations, and report favorable conditions as well as unfavorable conditions. To determine whether the inspections were conducted in compliance with the applicable regulations, we reviewed the quality assurance files for all inspections that were completed in calendar year 1988. In 1988, the quality assurance staff inspected six of the seven maintenance functions and properly obtained a waiver for not inspecting the seventh function.

For each of the six inspections that the quality assurance staff conducted, the staff complied with Air National Guard regulations by rating each of the functions, identifying discrepancies as major or minor, recommending measures to correct the major discrepancies, and reporting favorable conditions identified. The quality assurance staff also followed up on discrepancies uncovered during previous inspections.

THE FIW COMPLIED WITH AIR NATIONAL
GUARD REGULATIONS IN CONDUCTING
FUNCTIONAL CHECK FLIGHTS ON AIRCRAFT

Air Force directives require that an aircrew test-fly its aircraft after some types of maintenance have been completed on the aircraft. These flight tests are known as "functional check flights" and are performed to ensure that aircraft are airworthy and capable of performing their mission. Air National Guard regulations direct each air defense unit to develop its own procedures for carrying out functional check flights. We determined that the FIW had implemented its own procedures that comply with Air National Guard regulations.

The FIW procedures designate the unit's quality assurance staff to be responsible for ensuring that all functional check flights that are required are carried out properly. The quality assurance staff are responsible for briefing each aircrew about to perform a functional check flight on the purpose of the flight, the history of maintenance discrepancies on the aircraft, and the documents that the aircrew must complete at the conclusion of the check flight. The quality assurance staff are also responsible for maintaining a file that aircrews are to use in conducting functional check flights. According to Air National Guard regulations, this file must contain information such as specific FIW directives for check flights, a map of the area over which the check flight is to be flown, and a list of those aircrew members who are authorized to fly aircraft during functional check flights. The quality assurance staff are also

responsible for ensuring that the aircrew uses a checklist that outlines each of the aircraft functions that the aircrew is to evaluate during the check flight and for ensuring that the appropriate documents are completed after the check flight.

We observed the briefings and debriefings of aircrews for 4 of the 16 functional check flights that occurred from October 27, 1988, to January 12, 1989. For all 4 check flights, the quality assurance staff complied with the FIW's procedure for conducting briefings and debriefings for functional check flights and for ensuring that the results of the flights are properly documented. Also, the quality assurance staff had prepared the required file containing information such as specific FIW directives on check flights, a checklist for each of the items that the aircrew was to evaluate during the flight, a map of the area over which the check flight was to be flown, and a list of those aircrew members who were authorized to fly check flights.

THE FIW IS PROPERLY ASSESSING AIRCRAFT
SUSPECTED OF BEING OVERSTRESSED IN FLIGHT

Air Force directives require that maintenance personnel inspect aircraft that may have been stressed beyond specific limits during flight. The Air Force has established specific limits of force that an aircraft can endure, and once these limits are exceeded during a flight, maintenance personnel must inspect the aircraft before the aircraft can be flown again. To express these limits, the Air Force uses measurements known as acceleration units or "G" units, which are

measurements of the forces an aircraft experiences in flight maneuvers such as turns. For example, in a flight that involves a 5-G maneuver, the aircraft would have been subjected to a force that is five times the force of the earth's gravity. Inside each of the FIW's aircraft are "G-meters" that indicate the amount of "G's" that an aircraft has been subjected to during flight. Based usually on information recorded during a flight on the aircraft's G-meter, the aircrew or the ground crew make the first report of a possible overstress condition on an aircraft.

At the completion of each flight, the aircrew for that flight meets with maintenance personnel to discuss the flight and to discuss any deficiencies that the aircrew noticed during the flight. It is usually during this debriefing that the aircrew or maintenance personnel identify that a possible overstress condition took place during the flight. Once the maintenance personnel in charge of debriefing the aircrew are aware of a possible overstress condition, they must report this condition to the quality assurance staff. The FIW has established its own procedures for ensuring that all possible overstress conditions are evaluated by its quality assurance staff to determine whether further action, such as an inspection of the aircraft, is warranted. The aircraft cannot be flown again until the quality assurance staff complete their evaluation of the possible overstress condition.

Once notified of possible overstress to an aircraft, the quality assurance staff are responsible for obtaining all the flight data that they need to compute whether an overstress condition occurred. Such data include the readings from the G-meters; aircraft weight, speed, and altitude; and the type of aircraft maneuvers accomplished during the flight. If, after completing their computation, the quality assurance staff find that overstress has occurred on an aircraft, either of two actions must result depending on whether the incident is determined to be a major or a minor incident of overstress.

First, if the quality assurance staff determine that a major incident took place, the aircraft is immediately grounded until maintenance personnel can perform a major inspection of the aircraft. The major inspection covers critical structural and linkage items, such as engine mounting bolts and wing and fuselage components, for distortions, buckles, and cracks. Second, if the quality assurance staff determine that a minor incident took place, the incident is entered into the unit's log of all overstress incidents and into the flight and maintenance records for that aircraft. Once five minor incidents of overstress have occurred on an aircraft since the aircraft's last inspection for damage caused by overstress, the FIW's maintenance personnel must inspect that aircraft before the aircraft can be flown again. Air Force directives allow a unit to cancel all accumulated reports of overstress when the aircraft is inspected for the overstress conditions and when such information is no longer needed

by the unit. As a result, not all previous incidents of aircraft overstress are contained in the quality assurance files.

Finally, if an inspection determines that an aircraft is damaged and will cost more than \$10,000 to repair, the FIW's chief of safety is required to report the damage in a "mishap report" to the Air Force Inspection and Safety Center. The Air Force defines a mishap as "an unplanned event that results in death, injury, occupational illness, or damage to, or loss of equipment or property." The Air Force Inspection and Safety Center collects information on aircraft mishaps and conducts studies to identify the causes of them in an effort to prevent future mishaps.

As of October 12, 1988, the quality assurance files contained 21 incidents of possible overstress that occurred from January 1987 to October 12, 1988. We reviewed the files for the 21 incidents to determine whether the FIW's quality assurance staff followed their own procedures in verifying and reporting overstress incidents. Specifically, we determined whether the quality assurance staff gathered the necessary flight data and then computed whether an overstress condition occurred and whether the FIW's chief of safety properly reported to the Air Force Inspection and Safety Center any damage to the aircraft caused by the overstress conditions.

For 20 of the 21 incidents of possible overstress that we reviewed, the quality assurance staff computed whether overstress had occurred and, if it had, the amount that occurred and made a determination for further action that was required. (The file for the remaining overstress incident shows that the quality assurance staff determined a minor inspection was required. However, the staff's worksheets did not show the computations the staff used in making their decision.)

For 15 of the 21 incidents, the quality assurance staff determined that major inspections of the aircraft were not required. For the remaining 6 incidents, the quality assurance staff determined that major inspections were required. Once the maintenance personnel inspected the aircraft involved in each of these 6 incidents, the FIW's chief of safety reported one of these incidents to the Air Force Inspection and Safety Center. According to the chief of safety, this was the only incident of the 6 incidents that we reviewed for which the FIW's estimate of the cost to repair the aircraft approached the \$10,000 threshold. Subsequently, the chief of safety determined that the actual cost for the repair was less than \$9,000. Because the damage cost less than \$10,000 to repair, the chief of safety rescinded his mishap report. We could not independently verify the costs to repair the aircraft because the FIW does not keep records of labor and parts costs once the damage is determined to be less than \$10,000 and, therefore, not required to be reported in a mishap report.

THE FIW MAINTAINED ITS AIRCRAFT
SO THAT IT WAS ABLE TO MEET
ITS FLIGHT TRAINING AND
AIR DEFENSE ALERT COMMITMENTS

Each week, the FIW's deputy commander for maintenance and the deputy commander for operations reach an agreement on the number of flights and the number of flying hours necessary for the FIW to meet its annual flight training and air defense alert commitments. Maintenance personnel are responsible for maintaining the aircraft so that the FIW's aircrews can fly the flights and hours agreed upon.

To meet the FIW's flight training and air defense alert commitments, the deputy commander for maintenance agreed to have the FIW's aircraft ready for 3,426 F-4 flights and 4,863 flying hours in federal fiscal year 1987-88, the period from October 1987 through September 1988. During this period, the FIW aircrews actually flew 3,509 F-4 flights and 5,078 hours, which, according to the FIW's deputy commander for operations, met the FIW's operational requirements for flight training and air defense alert commitments. The deputy commander for maintenance stated that the additional number of flights and flying hours flown by the FIW's aircrews included flights required for Air Force directed exercises and functional check flights.

Historical maintenance records indicate that the deputy commander for maintenance also met the FIW's requirements for flights and flying hours from October 1985 through September 1987. The maintenance records indicate that, from October 1985 through

September 1986, the deputy commander for maintenance agreed to provide 3,050 flights and 4,378 flying hours, and that the FIW actually flew 3,174 flights and 4,408 hours. The records also show that, from October 1986 through September 1987, the deputy commander for maintenance agreed to provide 3,185 flights and 4,429 flying hours and that the FIW actually flew 3,445 flights and 4,865 hours.

THE FIW'S AIRCREW TRAINING PROGRAM
COMPLIED WITH AIRCREW TRAINING REQUIREMENTS

The Air Force has established specific training requirements for aircrews, such as those of the FIW, that fly the F-4 on air defense missions. (An aircrew for the F-4 consists of a pilot and a weapons systems officer.) During our review, we focused on three training requirements. First, according to requirements of the Air Force's Tactical Air Command (TAC), a pilot and a weapons systems officer must perform a minimum number of flights for each required training event during each six-month training period. During the period of our review, a training event was any of 23 flying or air defense actions that an aircrew must have been able to perform. For example, each pilot and weapons systems officer was required to fly at least one training event in which he performs a nighttime air-to-air aircraft refueling. Second, to further ensure that pilot skills remain proficient, the TAC requires that each pilot repeat specific training events at specified intervals. For example, an experienced pilot must fly a low-altitude event every 90 days. A pilot that has not performed this event within the last 90 days ultimately risks having to repeat

his initial qualification training. To requalify for this event, a pilot must accomplish the low-altitude event while accompanied by an instructor pilot. Third, Air Force regulations require that aircrew members accurately record their training activity in their individual training records.

We reviewed the training records for the period from July through December 1988 for 7 of the FIW's 39 pilots and 2 of the FIW's 28 weapons systems officers to determine whether these individuals flew the minimum number of flights for each required training event. Each of the 7 pilots and 2 weapons systems officers in our sample accomplished at least the minimum number of flights for each of the required training events during the training period from July through December 1988. For example, each pilot and weapons systems officer completed at least 2 flights involving nighttime air-to-air aircraft refueling, at least 12 flights involving air combat training, and at least 3 flights involving practice in the jamming of enemy communications, as required.

To determine whether the FIW's pilots were qualified to fly six training events that they flew, we reviewed the training records of all 39 pilots on December 7, 1988, a day during the July through December 1988 training period. The six training events were low-altitude flying, air combat training, landings, air-to-air aircraft refueling, formation takeoffs, and formation landings. For all 39 pilots, we determined whether the pilots were qualified to fly each of

the six training events by checking the days that the pilots last flew the training events. Thus, by multiplying the number of pilots by the six training events, we reviewed a total of 234 training events. If a pilot had previously flown the training event within the requisite number of days, then the pilot was qualified to fly that training event. For 233 of the 234 training events that we reviewed, all 39 of the FIW's pilots were qualified to fly the training events on the days that they flew them. (We could not confirm whether one pilot was qualified to fly one training event because the records covering one of the six training events for that pilot had been disposed of. Disposal of these records was in accordance with Air Force regulations.)

To determine whether pilots and weapons systems officers accurately recorded their training, we reviewed the training records for a sample of 12 of the 248 training days that occurred during the period from January through December 1988. On each of these 12 days, one or more of the FIW's aircrews logged a flight in which they completed one or more training events. We tested the accuracy of all the entries that pilots or weapons systems officers made on each of these 12 days for required training events by comparing each entry in the training records with the FIW's schedule of all planned flight activity. Also, for training activities common to both the pilot and the weapons systems officer, we determined that the entries made in the respective training records were consistent. All entries in the training records for each of these 12 days agreed with other FIW flight documents.

THE FIW COMPLIED WITH REGULATIONS
REGARDING FLIGHT SAFETY

From October 1987 through September 1988, the FIW complied with Air Force and Air National Guard regulations for discussing flight safety information, developing procedures for distributing mishap reports, and reporting aircraft mishaps.

Air Force and Air National Guard regulations require Air National Guard units to establish a safety office with responsibility for managing the safety program, investigating mishaps, and monitoring corrective actions. Air National Guard regulations require that a unit's chief of safety conduct a flight safety meeting or issue a flight safety newsletter for aircrews at least once a quarter to discuss flight safety information. From October 1987 through September 1988, the FIW's chief of safety conducted a total of nine flight safety meetings and issued nine corresponding flight safety newsletters. The chief of safety held at least one of these meetings and issued at least one of the corresponding newsletters each quarter and, therefore, exceeded the requirement to conduct a meeting or issue a newsletter at least once a quarter. Also, the chief of safety prepared minutes of each of the nine meetings and ensured that aircrew members who missed the flight safety meetings acknowledged in writing that they read the minutes of all meetings that they missed.

The Air Force also requires that a unit's safety office develop procedures for distributing to personnel throughout the unit and to personnel in other Air National Guard and Air Force units information from the safety office's mishap reports that may help other units prevent mishaps. We confirmed that the FIW's safety office had developed procedures for distributing to its own personnel and to other Air National Guard and Air Force units information contained in its own mishap reports. The safety office has a prepared teletype document that, when completed with the details of the specific mishap, is transmitted to all applicable Air National Guard and Air Force units.

We also confirmed that, from October 1987 through September 1988, the FIW complied with the Air Force's mishap reporting requirements. Once an aircraft mishap occurs, the FIW requires aircrew members to report the mishap to the safety office. We reviewed the mishap files that are kept by the FIW's safety office to determine the number of mishaps that the FIW experienced during the period of our review. The safety office documented on a mishap log that 11 aircraft mishaps occurred during the period of our review. We determined whether the safety office categorized each of these mishaps as a reportable or nonreportable mishap. If the safety office estimates that a mishap will cost \$10,000 or more to repair or result in more than eight hours of lost work time, the mishap is reportable, and the FIW must report it to the Air Force's Inspection and Safety Center. If the safety office estimates that the mishap will cost less than \$10,000

to repair and not result in lost work time of eight hours or more, the mishap is nonreportable, and the FIW is not required to report it to the Air Force's Inspection and Safety Center.

During the period of our review, the safety office categorized 11 mishaps as reportable. We confirmed that the FIW properly reported these 11 mishaps to the Air Force's Inspection and Safety Center.

VARIOUS AIR FORCE INSPECTION TEAMS RATE
THE FIW'S OPERATIONS FROM OCTOBER 1987
THROUGH DECEMBER 1988 AS EXCELLENT

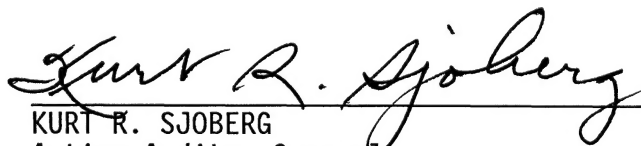
From October 1987 through December 1988, the period of our review after the June 1987 accident, the Air Force conducted one inspection of the FIW and performed one evaluation of the FIW's aircrew training program.

The Air Force conducted an operational readiness inspection of the FIW in March 1988. (See Chapter I for more detail on this type of inspection and the other types of inspections and evaluations we discuss in this section of our report.) In this 1988 inspection, the inspection team awarded excellent ratings to the FIW for the overall readiness of the FIW and the readiness of the FIW's maintenance program. An excellent rating means that the FIW's ability to rapidly prepare for combat and to conduct combat operations exceeds mission requirements and that the FIW's procedures and activities are conducted in a superior manner. The 1988 operational readiness inspection did not rate the FIW's aircrew training or flight safety program.

In addition to the operational readiness inspection, the Air Force conducted one evaluation of the FIW's aircrew training program in November 1988. This evaluation assessed the capability of the FIW's flight instructors to instruct and evaluate aircrew members and assessed the capability of aircrew members to perform their unit mission. This evaluation also reviewed whether the FIW complied with various Air Force administrative, recordkeeping, and operational procedures. According to the rating system, the evaluation teams rated the FIW's aircrew training program as excellent in the November 1988 evaluation.

We conducted this review under the authority vested in the auditor general by Section 10500 et seq. of the California Government Code and according to generally accepted governmental auditing standards. We limited our review to those areas specified in the audit scope section of this report.

Respectfully submitted,


KURT R. SJOBERG
Acting Auditor General

Date: April 24, 1989

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April 20, 1989

Kurt R. Sjoberg
Acting Auditor General
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Dear Mr. Sjoberg:

Thank you for the opportunity to present our comments on the draft copy of your office's report Number P-822, "A Review of The California Air National Guard's 144th Fighter Interceptor Wing."

This department appreciates the many months of diligent effort spent by the six members of the audit team and the professional manner in which they conducted their study of the 144th's management and operations.

As you are aware, to examine the 144th for the period covering January 1985-September 1987, your audit team requested all records and documents covering the 144th's aircrew training, aircraft maintenance and flight safety for that period. The team was provided all of those records, save for those out-of-date materials which Air Force regulations require to be disposed of after certain periods of time. Fortunately, Air Force and Air National Guard inspection teams, which had performed on-site management effectiveness and operational readiness inspections during those times, had access to and examined all those back-up materials and rated the 144th's management and operations as "excellent."

You are probably also aware that the audit team wished to examine a copy of the Air Force's Mishap Safety Investigation Board report of the June 13, 1987 aircraft accident. Since I did not have the legal authority to release the report which was prepared by the active Air Force, I personally requested the Air Force Inspection and Safety Center at Norton Air Force Base, California to grant an exemption of Department of Defense policy and allow your auditors to examine this report. To our regret, the Air Force refused our request, citing executive privilege against release of these documents and a number of United States Supreme Court cases supporting this position. Your team was provided, however, with a complete copy of the Aircraft Accident Investigation report which is releasable pursuant to Air Force regulations.

Other than this point, and recognizing the editorial and format limitations under which the audit team can present its findings, this Department substantially agrees with the conclusions contained in the report.

Sincerely,



Robert C. Thrasher
Major General
The Adjutant General

cc: Members of the Legislature
Office of the Governor
Office of the Lieutenant Governor
State Controller
Legislative Analyst
Assembly Office of Research
Senate Office of Research
Assembly Majority/Minority Consultants
Senate Majority/Minority Consultants
Capitol Press Corps